Jesse Eaton

Computational Biologist

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OBJECTIVE

I am a computational biologist interested in genetic disease, personalized medicine, and data science looking for a full time position starting January 2018 where I can apply my understanding of analysis to complex problems and contribute to the scientific community.

EDUCATION

Carnegie Mellon University September 2016 - December 2017
M.S. Computational Biology
GPA: 3.89

Tufts University September 2011 - May 2015
B.S. Biomedical Engineering
Minor: Computer Science
GPA: 3.45

SKILLS

Programming	C, C++, Python, R, Go, Matlab / Octave, HTML, CSS, Javascript, Ruby + Rails
Computer	Git, Unix environment, API Development, MongoDB
Math and Science	Algorithm development, Regression analysis, Linear optimization
Biology	Sequence alignment analysis, Cell culture, Confocal backscattering microscopy

RESEARCH

Tumor Sample Deconvolution and Phylogenetic Inference using SVs July 2017 - Ongoing
Carnegie Mellon University in Professor Russell Schwartz's Lab

- Defined novel constraints for inferring phylogenies from bulk tumor derived structural variants (SVs)
- Enforced biologically relevant relations between structural variants and copy number variation segments
- Implemented integer linear program to deconvolve bulk tumor samples adhering to phylogenetic constraints

Phylogenetic Models for Predicting Cancer Progression January 2017 - June 2017
Carnegie Mellon University in Professor Russell Schwartz's Lab

- Solely constructed pipeline for tumor genomic sample analysis and prediction
- Developed and implemented algorithms for extracting features from phylogenetic models of tumors
- Predicted cancer progression with increased accuracy using genomic in addition to clinical features

Detection of Circulating Tumor Cells September 2014 - May 2015
Tufts University in Professor Irene Georgakoudi's Lab

- Investigated effect of density separation on forward and side scattering for leukocytes and breast cancer cell lines
- Analyzed differences in backscattering between breast cancer cell lines and populations of leukocytes

COURSES

Computer Science	Machine Learning, Algorithms, Data Structures, Machine structure and assembly, Web programming
Math	Statistical inference, Modern regression, Discrete math, Calculus (I, II, III), Differential Equations
Biology	Computational Genomics, Genetics, Quantitative physiology (I, II), Drug delivery, Medical imaging, Tissue engineering, Biophotonics, Cellular biology
Engineering	Electrical systems, Biomedical engineering, Mechanical statics and dynamics, Fluid mechanics, Thermodynamics
Physics and Chemistry	Physics (I, II), Chemistry (I, II), Quantum Chemistry

WORK

Graduate Researcher May 2017 - September 2017
Carnegie Mellon University in Professor Russell Schwartz's Lab

· Designed, implemented, and documented pipeline with custom algorithms to predict tumor progression
· Established theory for tumor sample deconvolution and phylogenetic inference using structural variants
· Instituted daily 15 minute meeting and use of Slack communication tool to increase lab productivity

Software Systems Engineer September 2015 - August 2016
MITRE Corporation in Open Health Services Department

· Designed and developed web based electronic medical record validation tool
· Core engineer in fast paced collaborative development environment
· Built RESTful API service for internal and external consumption

Software Engineering Intern May 2014 - August 2014
MITRE Corporation in Operational Innovation and Transportation Department

· Utilized configuration management tool (Chef) for deployment of scalable software
· Devised alert system for configuration updates on Amazon Elastic Compute Cloud (AWS)

ADDITIONAL EXPERIENCE

Sub-reviewer September 2017
Carnegie Mellon University in Professor Russell Schwartz's Lab

· Assisted with reviewing tumor phylogeny related papers for the Asia-Pacific Bioinformatics Conference
· Critiqued experimental design and suggested improvements for model specifications

BIOMEDevice Conference Attendee April 2016
MITRE Corporation in Open Health Services Department

· Documented emerging technologies for the purpose of understanding trends in medicine
· Presented findings to department and recommended new directions for department